



431 River Road
Bow, NH 03304

GSP MERRIMACK

April 4, 2019

U.S. Environmental Protection Agency
Region 1: New England
Office of Ecosystem Protection
Water Technical Unit (OES04 – SMR)
5 Post Office Square - Suite 100
Boston, MA 02109-3912

Dear Sir/Madam:

Merrimack Station
NPDES Permit No. NH0001465
2018 Annual Fish Impingement Report

Granite Shore Power LLC (GSP) herein submits this Annual Fish Impingement Report for the year 2018 pursuant to Part I., Section A.10.b. of the Merrimack Station NPDES Permit, No. NH0001465. This permit condition requires GSP to conduct impingement monitoring at Merrimack Station according to the provisions below.

- GSP shall provide impingement monitoring at Merrimack Station when flows from Garvins Falls Hydroelectric Station are less than 900 cubic feet per second (cfs) during any period from July 1 through October 15.
- GSP shall collect all fish from both MK-1 and MK-2 traveling screen washes during one continuous 48-hour period per week when the conditions outlined above are met.
- GSP shall report in writing to the New Hampshire Fish & Game Department (NHFGD), United States Fish and Wildlife Service (USFWS), New Hampshire Department of Environmental Services (NHDES) and the United States Environmental Protection Agency (USEPA) any Extraordinary Impingement Event (EIE) at Merrimack Station. An EIE is defined as an event when 50 or more fish at any one time, of any size or species, are either distressed or killed as a result of impingement.

Weekly sampling logs are attached which show that no impingement samples were collected in 2018 because the river flow was greater than 900 cfs at all times that Merrimack Station was withdrawing water to run the generating units. There were no extraordinary impingement events in 2018.

If you have any questions regarding this report, please call Allan Palmer at (603) 230-7951.

Sincerely,

GRANITE SHORE POWER

Elizabeth H. Tillotson
Executive Director of Administration & Regulatory Affairs

cc: Ms. Sharon M. DeMeo
US Environmental Protection Agency
Region 1: New England
Office of Ecosystem Protection
Mail Code: OEP
5 Post Office Square - Suite 100
Boston, MA 02109-3912

Mr. Eric Nelson
US Environmental Protection Agency
Region 1: New England
Office of Ecosystem Protection
Mail Code: OEP
5 Post Office Square - Suite 100
Boston, MA 02109-3912

NH Department of Environmental Services
Water Division
Wastewater Engineering Bureau
Permits and Compliance Section
29 Hazen Drive, P.O. Box 95
Concord, NH 03302-0095

Mr. Joseph F. McKeon
US Fish and Wildlife Service
Central New England Fishery Resources Office
151 Broad Street
Nashua, NH 03063

Mr. John Magee, Fish Habitat Biologist
New Hampshire Fish and Game Department
Inland Fisheries Division
11 Hazen Drive
Concord, NH 03301

Ms. Carol Henderson, Environmental Review Coordinator
New Hampshire Fish and Game Department
11 Hazen Drive
Concord, NH 03301



GSP MERRIMACK

MERRIMACK STATION
FISH IMPINGEMENT MONITORING
REPORT

JULY 1 TO OCTOBER 15
2018

ENVIRONMENTAL DATA

FISH IMPINGEMENT MONITORING WEEKLY DATA SHEET MERRIMACK STATION

Week Ending 7/7/18

SAMPLING PERIOD Begin <table border="1" style="display: inline-table; width: 100px; height: 20px;"><div style="border: none; width: 100%; height: 100%; position: relative;"><div style="position: absolute; top: 0; left: 0; right: 0; bottom: 0; border-bottom: 1px solid black;"></div></div></table> End <table border="1" style="display: inline-table; width: 100px; height: 20px;"><div style="border: none; width: 100%; height: 100%; position: relative;"><div style="position: absolute; top: 0; left: 0; right: 0; bottom: 0; border-bottom: 1px solid black;"></div></div></table>	RIVER FLOW < > 900 cfs <div style="border: 1px solid black; padding: 2px; display: inline-block;">> 900 cfs</div>	UNIT STATUS On/Off MK-1 <div style="border: 1px solid black; padding: 2px; display: inline-block;">ON</div> MK-2 <div style="border: 1px solid black; padding: 2px; display: inline-block;">ON</div>	PUMP STATUS On/Off MK-1 <div style="border: 1px solid black; padding: 2px; display: inline-block;">A+B</div> MK-2 <div style="border: 1px solid black; padding: 2px; display: inline-block;">A+B</div>
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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Alewife																				
American Shad																				
Small mouth Bass																				
Largemouth Bass																				
Bluegill Sunfish																				
Pumpkinseed Sunfish																				
Redbreasted Sunfish																				
Brown Bullhead																				
White Sucker																				
Yellow Perch																				
Common Shiner																				
Spottail Shiner																				
American eel																				

Week Ending 7/14/18

SAMPLING PERIOD		RIVER FLOW < > 900 cfs	UNIT STATUS On/Off	PUMP STATUS On/Off		
Begin			MK-1	off	MK-1	off
End			MK-2	off	MK-2	off







[illegible]

Week Ending 7/21/18

SAMPLING PERIOD		RIVER FLOW < > 900 cfs	UNIT STATUS On/Off		PUMP STATUS On/Off	
Begin			MK-1		MK-1	
End			MK-2		MK-2	

[illegible]

Week Ending 8/4/18

SAMPLING PERIOD		RIVER FLOW < > 900 cfs	UNIT STATUS On/Off	PUMP STATUS On/Off		
Begin			MK-1		MK-1	
End			MK-2		MK-2	

[illegible]

Week Ending 8/11/18

SAMPLING PERIOD		RIVER FLOW < > 900 cfs	UNIT STATUS On/Off		PUMP STATUS On/Off	
Begin		<u>> 900 cfs</u>	MK-1	ON	MK-1	A+B
End			MK-2	ON	MK-2	A+B

[illegible]

FISH IMPINGEMENT MONITORING WEEKLY DATA SHEET MERRIMACK STATION

Week Ending 8/18/18

SAMPLING PERIOD		RIVER FLOW < > 900 cfs	UNIT STATUS On/Off		PUMP STATUS On/Off	
Begin	<div style="border: 1px solid black; height: 20px; width: 100%; position: relative;"><div style="position: absolute; top: 0; left: 0; right: 0; bottom: 0; border-left: 1px solid black; border-right: 1px solid black; border-bottom: 1px solid black;"></div></div>	<div style="border: 1px solid black; padding: 2px; text-align: center;">> 900 cfs</div>	MK-1	<div style="border: 1px solid black; padding: 2px; text-align: center;">off</div>	MK-1	<div style="border: 1px solid black; padding: 2px; text-align: center;">—</div>
End			MK-2	<div style="border: 1px solid black; padding: 2px; text-align: center;">ON</div>	MK-2	<div style="border: 1px solid black; padding: 2px; text-align: center;">A+B</div>

Alewife																			
American Shad																			
Small mouth Bass																			
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Brown Bullhead																			
White Sucker																			
Yellow Perch																			
Common Shiner																			
Spottail Shiner																			
American eel																			

SAMPLING PERIOD		RIVER FLOW < > 900 cfs	UNIT STATUS On/Off	PUMP STATUS On/Off
Begin			MK-1 off	MK-1 off
End			MK-2 off	MK-2 off

Revised 7/06/13
KLK

FISH IMPINGEMENT MONITORING WEEKLY DATA SHEET MERRIMACK STATION

Week Ending 9/1/18

SAMPLING
PERIOD

Begin	/
End	

RIVER FLOW
< > 900 cfs

> 900 cfs

UNIT STATUS
On/Off

MK-1	ON
MK-2	ON

PUMP STATUS
On/Off

MK-1	A+B
MK-2	A+B

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
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White Sucker																				
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Spottail Shiner																				
American eel																				

Week Ending 9/8/18

A diagram illustrating a sampling period. It consists of a rectangle with a horizontal line across its middle. The top half of the rectangle is labeled "SAMPLING PERIOD". The left side of the rectangle has two labels: "Begin" at the top and "End" at the bottom. A diagonal line starts at the "End" label and extends upwards and to the right, crossing the horizontal line and ending at the top right corner of the rectangle.

RIVER FLOW
< > 900 cfs

> 900 cfs

UNIT STATUS
On/Off

MK-1	ON
MK-2	ON

PUMP STATUS
On/Off

MK-1	A + B
MK-2	A + B



[illegible]

FISH IMPINGEMENT MONITORING WEEKLY DATA SHEET MERRIMACK STATION

Week Ending 9/15/18

SAMPLING PERIOD Begin <div style="border: 1px solid black; width: 100px; height: 20px; display: inline-block; position: relative; top: -10px;"> / </div> End <div style="border: 1px solid black; width: 100px; height: 20px; display: inline-block; position: relative; top: -10px;"> / </div>	RIVER FLOW < > 900 cfs <div style="border: 1px solid black; width: 100px; height: 20px; display: inline-block; position: relative; top: -10px;"> / </div>	UNIT STATUS On/Off MK-1 <div style="border: 1px solid black; width: 100px; height: 20px; display: inline-block; position: relative; top: -10px;"> off </div> MK-2 <div style="border: 1px solid black; width: 100px; height: 20px; display: inline-block; position: relative; top: -10px;"> off </div>	PUMP STATUS On/Off MK-1 <div style="border: 1px solid black; width: 100px; height: 20px; display: inline-block; position: relative; top: -10px;"> off </div> MK-2 <div style="border: 1px solid black; width: 100px; height: 20px; display: inline-block; position: relative; top: -10px;"> off </div>
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American eel																				

SAMPLING PERIOD		RIVER FLOW < > 900 cfs	UNIT STATUS On/Off		PUMP STATUS On/Off	
Begin			MK-1	off	MK-1	off
End			MK-2	off	MK-2	off

[illegible]

A diagram illustrating a sampling period. It consists of a horizontal rectangle. Above the rectangle, the text "SAMPLING PERIOD" is centered. Inside the rectangle, a diagonal line starts from the bottom-left corner and goes towards the top-right corner. To the left of the rectangle, the word "Begin" is aligned with the start of the diagonal line, and the word "End" is aligned with the end of the diagonal line.

MK-1	off
MK-2	off

MK-1	off
MK-2	off



[illegible]

SAMPLING PERIOD		RIVER FLOW < > 900 cfs	UNIT STATUS On/Off	PUMP STATUS On/Off
Begin			MK-1 off	MK-1 off
End			MK-2 off	MK-2 off

Revised 7/06/18
KLLK

PUMP STATUS	
On/Off	
MK-1	off
MK-2	off

Revised 7/06/18
KLL

SAMPLING PERIOD		RIVER FLOW < > 900 cfs	UNIT STATUS On/Off	PUMP STATUS On/Off		
Begin			MK-1	off	MK-1	off
End			MK-2	off	MK-2	off

* End of monitoring period.

[illegible]